

SEQUENCE LISTING

<110> GARVER, Eric  
TU, Guang-Chou  
ISRAEL, Yedy

<120> METHODS OF INHIBITING ALCOHOL CONSUMPTION

<130> 9855-3U2

<140> NOT YET ASSIGNED

<141> 2001-08-17

<150> US 60/051,705

<151> 1997-07-03

<150> US 09/109,663

<151> 1998-07-02

<160> 111

<170> PatentIn Ver. 2.1

<210> 1

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 1

cctcgctgag ttctgccgc t

21

<210> 2

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 2

ccgtgctcat ggtgtccttt c

21

<210> 3  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 3  
gatcatgctt tcoogtgctca t

21

<210> 4  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 4  
ggcactcacc tcctccttgt t

21

<210> 5  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 5  
acacttactg agtgtgaggg t

21

<210> 6  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 6  
aaacttacct acgacgtggg c

21

<210> 7  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 7  
gtcgcctcac agagcaatga c

21

<210> 8  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 8  
agtgagttcc gaaagcccat t

21

<210> 9  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 9  
ggcatcgaca ttcggggatc c

21

<210> 10  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 10

tgatccactc ccccctccac t

21

<210> 11

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 11

cagccttgatg agccagaggc a

21

<210> 12

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 12

ggaggcctga gacatcttca g

21

<210> 13

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 13

agggaaggaa ggaaggaagg g

21

<210> 14  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 14  
ctgagggagg gaaggaagga a

21

<210> 15  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 15  
ggttccgtaa ggaaggctgg

20

<210> 16  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 16  
aataataaat aataaataaa t

21

<210> 17  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 17

ttcccaacgc tgggtcctcc a

21

<210> 18

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 18

cccccgatcc actcaggcat c

21

<210> 19

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 19

actccccga tccactcagg c

21

<210> 20

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 20

tccactcccc cgateccactc a

21

<210> 21

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 21

ccctccactc ccccgatcca c

21

<210> 22

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 22

ccccctcca ctccccgat c

21

<210> 23

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 23

actccccct ccaactcccc g

21

<210> 24

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 24

tccactcccc cctccactcc c

21

<210> 25

<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 25  
tgatccactc cccctccac t

21

<210> 26  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 26  
gcctgatcca ctccccctc c

21

<210> 27  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 27  
gcagcctgat ccactcccc c

21

<210> 28  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 28



gaggcagcct gatccactcc c

21

<210> 29

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 29

agtggagggg ggagtggatc a

21

<210> 30

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 30

ccctcactgc tacctcacct c

21

<210> 31

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 31

actccccct ccactcccc

19

<210> 32

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 32

tccactcccc cgatccac

18

<210> 33

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 33

tgatccactc ccccct

16

<210> 34

<211> 3634

<212> DNA

<213> Homo sapiens

<400> 34

gaattccggg tgatttcact cccggctgtc caggcttgtc ctgctacccc acccagcctt 60  
tcctgaggcc tcaagcctgc caccaagccc ccagctcctt ctccccgcag gacccaaaca 120  
caggcctcag gactcaacac agcttttccc tccaaccgt tttctctccc tcaacggact 180  
cagctttctg aagccctcc cagttctagt tctatctttt tcctgcatcc tgtctggaag 240  
ttagaaggaa acagaccaca gacctggtcc ccaaaagaaa tggaggcaat aggttttgag 300  
gggcatgggg acggggttca gctccaggg tcctacacac aaatcagtca gtggcccaga 360  
agacccccct cggaatcgga gcaggaggga tggggagtgt gaggggtatc cttgatgctt 420  
gtgtgtcccc aactttccaa atccccgccc ccgcgatgga gaagaaaccg agacagaagg 480  
tgcaggggccc actaccgctt cctccagatg agctcatggg tttctccacc aaggaagttt 540  
tccgtgggtt gaatgattct tccccgccc tcctctcgcc ccagggacat ataaaggcag 600  
ttgttggcac acccagccag cagacgtcc ctcagcaagg acagcagagg accagctaag 660  
agggagagaa gcaactacag accccccctg aaaacaaccc tcagacgcca catccctga 720  
caagctgcca ggcaggttct ctctctctca catactgacc caccggttca ccctctctcc 780  
cctggaaagg acaccatgag cactgaaagc atgatccggg acgtggagct ggccgaggag 840  
gcgctcccca agaagacagg ggggccccag ggctccaggc ggtgcttggt cctcagcctc 900  
ttctccttcc tgatcgtggc aggcgccacc acgctcttct gectgctgca ctttgaggatg 960  
atcgccccc agaggaaga ggtgagtgcc tggccagcct tcatccactc tcccacccaa 1020  
ggggaaatga gagacgcaag agagggagag agatgggatg ggtgaaagat gtgcgctgat 1080  
agggagggat gagagagaaa aaaacatgga gaaagacggg gatgcagaaa gagatgtggc 1140  
aagagatggg gaagagagag agagaaagat ggagagacag gatgtctggc acatggaagg 1200  
tgctcactaa gtgtgtatgg agtgaatgaa tgaatgaatg aatgaacaag cagatatata 1260  
aataagatat ggagacagat gtggggtgtg agaagagaga tgggggaaga aacaagtgat 1320

atgaataaag	atggtgagac	agaaagagcg	ggaaatatga	cagctaagga	gagagatggg	1380
ggagataagg	agagaagaag	ataggggtgc	tggcacacag	aagacactca	gggaaagagc	1440
tgttgaatgc	tggaaggtga	atacacagat	gaatggagag	agaaaaccag	acacctcagg	1500
gctaagagcg	caggccagac	aggcagccag	ctgttcctcc	tttaaggggtg	actccctcga	1560
tgttaaccat	tctccttctc	cccaacagtt	ccccagggac	ctctctctaa	tcagccctct	1620
ggcccaggca	gtcagtaagt	gtctccaaac	ctctttccta	attctgggtt	tgggtttggg	1680
ggtaggggtta	gtaccggtat	ggaagcagtg	ggggaaattt	aaagttttgg	tcttggggga	1740
ggatggatgg	aggtgaaagt	aggggggtat	tttctaggaa	gtttaagggt	ctcagctttt	1800
tcttttctct	ctcctcttca	ggatcatctt	ctcgaacccc	gagtgacaag	cctgtagccc	1860
atgttgtagg	taagagctct	gaggatgtgt	cttggaaactt	ggagggctag	gatttggggg	1920
ttgaagcccg	gctgatggta	ggcagaactt	ggagacaatg	tgagaaggac	tcgctgagct	1980
caagggaagg	gtggaggaac	agcacaggcc	ttagtgggat	actcagaacg	tcattggccag	2040
gtgggatgtg	ggatgacaga	cagagaggac	aggaaccgga	tgtgggggtg	gcagagctcg	2100
agggccagga	tgtggagagt	gaaccgacat	ggccacactg	actctcctct	ccctctctcc	2160
ctccctccag	caaaccctca	agctgagggg	cagctccagt	ggctgaaccg	ccggggccaat	2220
gccctcctgg	ccaatggcgt	ggagctgaga	gataaccagc	tgggtggtgc	atcagagggc	2280
ctgtacctca	tctactccca	ggctcctctt	aaggggccaag	gctgcccctc	cacctatgtg	2340
ctcctcacc	acaccatcag	ccgcctogcc	gtctcctacc	agaccaaggt	caacctcctc	2400
tctgccatca	agagcccctg	ccagagggag	acccagagg	gggtgaggc	caagccctgg	2460
tatgagccca	tctatctggg	aggggtcttc	cagctggaga	aggtgaccg	actcagcgct	2520
gagatcaatc	ggcccgaacta	tctcgacttt	gccgagctct	ggcaggtcta	ctttgggatc	2580
attgccctgt	gaggaggacg	aacatccaac	cttcccaaac	gcctcccctg	ccccaatccc	2640
tttattaccc	cctccttcag	acaccctcaa	cctcttctgg	ctcaaaaaga	gaattggggg	2700
cttaggggtcg	gaacccaagc	ttagaacttt	aagcaacaag	accaccactt	cgaaacctgg	2760
gattcaggaa	tgtgtggcct	gcacagtga	gtgctggcaa	ccactaagaa	ttcaaaactgg	2820
ggcctccaga	actcactggg	gcctacagct	ttgatccctg	acatctggaa	tctggagacc	2880
agggagcctt	tggttctggc	cagaatgctg	caggacttga	gaagacctca	cctagaaatt	2940
gacacaagtg	gaccttaggc	cttctctctt	ccagatgttt	ccagacttcc	ttgagacacg	3000
gagcccagcc	ctccccatgg	agccagctcc	ctctatttat	gtttgcaott	gtgattattt	3060
attattttatt	tattatttat	ttattttacag	atgaatgtat	ttattttggga	gaccggggta	3120
tcctggggga	cccaatgtag	gagctgcctt	ggctcagaca	tgttttccgt	gaaaacggag	3180
ctgaacaata	ggctgttccc	atgtagcccc	ctggcctctg	tgctttcttt	tgattatgtt	3240
ttttaaaata	tttatctgat	taagttgtct	aaacaatgct	gattttgggtga	ccaactgtca	3300
ctcattgtctg	agcctctgct	ccccagggga	gttgtgtctg	taatcgccct	actattcagt	3360
ggcgagaaat	aaagtgttgc	tagaaaagaa	acatggtctc	cttcttggaa	ttaattctgc	3420
atctgcctct	tcttgtgggt	gggaagaagc	tccctaagtc	ctctctccac	aggctttaag	3480
atccctcgga	ccagtcacca	tccttagact	cctagggccc	tggagaccct	acataaacia	3540
agcccaacag	aatattcccc	atcccccagg	aaacaagagc	ctgaacctaa	ttacctctcc	3600
ctcagggcat	gggaatttcc	aactctggga	attc			3634

<210> 35

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known

effective ASO

<400> 35

cctgctcccc cctggctcc

19

<210> 36

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 36

ccccaccac ttccctctc

20

<210> 37

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 37

ccccaccac ttccctctc a

21

<210> 38

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 38

tagacgataa aggggtcaga g

21

<210> 39

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 39

cagtctggga agctctgagg g

21

<210> 40

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 40

gggatagctg gtagtttag

19

<210> 41

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 41

catttctttt ccaagcgaac

20

<210> 42

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 42

aggctcctgt ttccggggag a

21

<210> 43  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 43  
ctggtcacctt ggtgtcctcg c

21

<210> 44  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 44  
ttgctgttct ccctcctggc t

21

<210> 45  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 45  
ttcttgccct ccctccctac t

21

<210> 46  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 46

cctctttccc ttaccctcct g

21

<210> 47

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 47

ggtctccctc cccaactctc c

21

<210> 48

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 48

cttcttccct gttccctgg c

21

<210> 49

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 49

tatctccctc gtctcccatc t

21

<210> 50

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 50

gtttcccctc catctccctc c

21

<210> 51

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 51

gaagcctccc cgctctttgc c

21

<210> 52

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 52

aaagctttaa gtcccccgcc c

21

<210> 53

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 53

cctattccct ttccctcccaa a

21



<210> 54  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 54  
cccttaggtt tcccagcaag c

21

<210> 55  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 55  
ctggtctttc cacgtcccat t

21

<210> 56  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 56  
gcagccttgt cccttgaaga g

21

<210> 57  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 57  
ottgagctca gctccctcag g 21

<210> 58  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 58  
gctggaagac tcctcccagg t 21

<210> 59  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 59  
gctgagcagg tcccccttct c 21

<210> 60  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 60  
agagccacaa ttccctttct a 21

<210> 61  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 61

gcctgaagac agcttcccaa c

21

<210> 62

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 62

cagtcacggc tcccgtggg

19

<210> 63

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 63

gggaaattcc caggaccagg g

21

<210> 64

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 64

atttgaatt cccagagtgg g

21

<210> 65

<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Candidate  
TNF(alpha) ASO

<400> 65  
actttcccag caggtatttg g

21

<210> 66  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 66  
cagccatggt tccccccaac

20

<210> 67  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 67  
ttccccagat gcacctgttt

20

<210> 68  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 68

gacatccctt tccccctcgg

20

<210> 69

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 69

gatccccggg taccga

16

<210> 70

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 70

gtcagccatg gtcccccccc

20

<210> 71

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 71

atgccctcat ccttcccccc at

22

<210> 72

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 72

gttctcccag cgtgtgccat

20

<210> 73

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 73

aacccttatt tgtgtccac c

21

<210> 74

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 74

gtcccaagag ttgaggag

18

<210> 75

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Known  
effective ASO

<400> 75

cacccgcctt ggcctccac

20

<210> 76

<211> 20

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Known  
effective ASO

<400> 76  
tccgcctgt gacatgcatt 20

<210> 77  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Known  
effective ASO

<400> 77  
ccatcccgac ctcgcgt 18

<210> 78  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Known  
effective ASO

<400> 78  
ccacgtcccg gatcatgc 18

<210> 79  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Known  
effective ASO

<400> 79  
tctgctgtcc ctgtaataaa 20

<210> 80  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Known  
effective ASO

<400> 80  
aaccagtcg tccctttgct 20

<210> 81  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Known  
effective ASO

<400> 81  
aaaacgtcag ccatggtccc 20

<210> 82  
<400> 82  
000

<210> 83  
<400> 83  
000

<210> 84  
<400> 84  
000

<210> 85  
<400> 85  
000



<210> 86  
<400> 86  
000

<210> 87  
<400> 87  
000

<210> 88  
<400> 88  
000

<210> 89  
<400> 89  
000

<210> 90  
<400> 90  
000

<210> 91  
<400> 91  
000

<210> 92  
<400> 92  
000

<210> 93  
<400> 93  
000

<210> 94  
<400> 94  
000

<210> 95  
<400> 95  
000

<210> 96  
<400> 96  
000

<210> 97  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Control  
oligonucleotide

<400> 97  
cagatgacct cccccgtgga a 21

<210> 98  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ASO-9

<400> 98  
tcctccttgt tcccttcggc t 21

<210> 99  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Control  
oligonucleotide

<400> 99  
cgtcttcact tccgtgtagg c 21

<210> 100  
<211> 21  
<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: 2-base  
mismatch of ASO-9

<400> 100

tcctcgttgt tcgcttcggc t

21

<210> 101

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: 3-base  
mismatch of ASO-9

<400> 101

tcctcgttgt tcgcatcggc t

21

<210> 102

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: 4-base  
mismatch of ASO-9

<400> 102

tccaagttgt acgcatcggc t

21

<210> 103

<400> 103

000

<210> 104

<400> 104

000

<210> 105

<400> 105

000

<210> 106

<400> 106

000

<210> 107

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Complement of  
ASO-9

<400> 107

agccgaaggagg aacaaggagg a

21

<210> 108

<211> 1889

<212> DNA

<213> Rattus norvegicus

<400> 108

gctttatctg ctaagctccg ctcaagttcag catgctgcgc gccgcactca gcaccgccc 60  
ccgtgggcca cgctgagcc gctgctgtc cgccgccgcc accagcgcgg tgccagcccc 120  
caaccagcag cccgaggtct tctgcaacca gatcttcatt aacaatgagt ggcatgatgc 180  
tgtcagcaag aaaacattcc ccaccgtcaa cccttccacg ggggaggtca tctgccaggt 240  
agccgaaggagg aacaaggagg acgtagacaa ggcagtgaag gccgctcagg cagccttcca 300  
gctgggctcg ccctggcgcc gcatggatgc atctgacagg ggccggctgt tgtaccgatt 360  
ggctgatctc atcgaaagg accggacctt cctggcggcc ttggagaccc tggacaacgg 420  
caagccttat gtcattctct acctgggtgga tttggacatg gttctgaaat gtctccgcta 480  
ttatgctggc tgggctgaca agtaccacgg gaaaaccatt cccatcgatg gcgaacttctt 540  
cagctacacc cgccacgagc ctgtgggcgt gtgtggacag atcattccgt ggaacttccc 600  
gtctctgatg caagcctgga agctgggccc tgccttgga actggaaaacg tgggtggtgat 660  
gaaagtggcc gagcagacac cgctcactgc actctacgtg gccaaacttga tcaaggaggc 720  
aggcttcccc cctgggtgtg tcaatattgt tcctggattc ggccctaccg ccggggctgc 780  
catcgctcc cagcaggatg tggacaaagt ggccttcaca ggctccactg aggttgggtca 840  
cctaattccag gttgccgccg ggagcagcaa tctcaagaga gtaaccctgg aactgggggg 900  
aaagagcccc aatatcatca tgtcagacgc tgacatggac tgggctgtgg aacaggcccc 960  
ctttgcctg ttcttcaacc agggccagt ctgttggtgc ggctcccga ccttcgtgca 1020  
ggaggatgtg tatgatgaat tcgtggaacg cagtgtggcc cgggccaagt ctgggtggt 1080  
cgggaacctt ttcgacagcc ggacggagca ggggccgcag gtggatgaga ctcaagttta 1140  
gaagatcctg ggctatatca agtcaggaca acaagaaggg gcgaagctgc tgtgagggtg 1200  
gggcgcgccg gcagaccgtg gttacttcat ccagcccacc gtgttcggag acgtcaaaga 1260

tgccatgacc	atcgccaagg	aggagatctt	cggaccagt	atgcagatcc	tcaaattcaa	1320
gaccattgag	gaggttgtgg	ggcgagccaa	taattccaag	tacgggctgg	ctgccgtgt	1380
cttcacaaag	gacctggaca	aggccaatta	cctgtcccaa	gctctgcagg	ctgggactgt	1440
gtggatcaac	tgctacgatg	tgtttggggc	ccagtcccca	tttgggtggc	ataagatgtc	1500
ggggagcggc	agggagctgg	gcgagtatgg	cctgcaggcc	tacacggaag	tgaagacgg	1560
cacogtcaaa	gtgccacaga	agaactcgta	aagtggcgtg	caggcttcct	cagccagcgc	1620
ccaaaaaccc	aacaagatcc	tgagaaaagc	caccaccaag	cacactgcgc	ctgccaagag	1680
aaaacccctt	caccaaagcg	tcttggggca	agaaagtcag	gatttgataa	acagggcagg	1740
gttgggtggc	ggtgtgtggg	gagcatccca	gtaaactggg	gaagggagga	gctctgtgca	1800
gactaccacg	cgcacgcaca	cacgctcact	gggtccttct	gtgctggatg	ctgggtccac	1860
cctcagtgt	taaacaaatg	agcaataaa				1889

<210> 109

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Complement of  
human anti-ALDH2 ASO

<400> 109

agctgaaggg gacaaggaag a

21

<210> 110

<211> 1989

<212> DNA

<213> Homo sapiens

<400> 110

gctctcggtc	cgctcgctgt	ccgctagccc	gctgcgatgt	tgccgctgc	cgccgctcgg	60
gccccgcctg	gccgcccct	cttgtcagcc	gccgccaccc	aggccgtgcc	tgcccccaac	120
cagcagcccg	aggtcttctg	caaccagatt	ttcataaaca	atgaatggca	cgatgocgtc	180
agcaggaaaa	cattccccac	cgtcaatccg	tccactggag	aggtcatctg	tcaggtagct	240
gaaggggaca	aggaagatgt	ggacaaggca	cgtgaaggcc	gcccgggcgc	cttccagctg	300
ggctcacctt	ggcgccgcat	ggacgcatca	cacagcggcc	ggctgctgaa	ccgcctggcc	360
gatetgatcg	agcgggaccg	gacctacctg	gcggccttgg	agaccctgga	caatggcaag	420
ccctatgtca	tctctacct	ggtggatttg	gacatggtcc	tcaaattgtct	coggtattat	480
gccggctggg	ctgataagta	ccacgggaaa	accatcccca	ttgacggaga	cttcttcagc	540
tacacaogcc	atgaacctgt	gggggtgtgc	gggcagatca	ttccgtggaa	tttcccgcctc	600
ctgatgcaag	catggaagct	gggcccagcc	ttggcaactg	gaaacgtgg	tgtgatgaag	660
gtagctgagc	agacaccctt	caccgccttc	tatgtggcca	acctgatcaa	ggaggctggc	720
tttccccctg	gtgtgggtcaa	cattgtgcct	ggatttggcc	ccacggctgg	ggccgccatt	780
gcctcccatg	aggatgtgga	caaagtggca	ttcacaggct	cactgagat	tggccgcgta	840
atccaggttg	ctgctgggag	cagcaacctc	aagagagtga	ccttggagct	gggggggaag	900
agcccccaaca	tcattcatgtc	agatgccgat	atggattggg	ccgtggaaca	ggcccacttc	960

```

gccctgttct tcaaccaggg ccagtgtgc tgtgccggct cccggacctt cgtgcaggag 1020
gacatctatg atgagtttgt ggtgcggagc gttgccggg ccaagtctcg ggtggtcggg 1080
aaccctttg atagcaagac cgagcagggg ccgcaggtgg atgaaactca gtttaagaag 1140
atcctcggct acatcaacac ggggaagcaa gagggggcga agctgctgtg tgggggggc 1200
attgctgctg accgtgggta cttcatccag cccactgtgt ttggagatgt gcaggatggc 1260
atgaccatcg ccaaggagga gatcttcggg ccagtgtgc agatcctgaa gttcaagacc 1320
atagaggagg ttgttgggag agccaacaat tccacgtacg ggctggccgc agctgtcttc 1380
acaaaggatt tggacaaggc caattacctg tcccaggccc tccaggcggg cactgtgtgg 1440
gtcaactgct atgatgtgtt tggagcccag tcaccctttg gtggctacaa gatgtcgggg 1500
agtggccggg agttgggcca gtacgggctg caggcataca ctgaagtga aactgtcaca 1560
gtcaaagtgc ctcaagaaga ctcataagaa tcatgcaagc ttctccctc agccattgat 1620
ggaaagttca gcaagatcag caacaaaacc aagaaaaatg atccttgctg gctgaatata 1680
tgaaaagaga aatttttcct acaaaatctc ttgggtcaag aaagttctag aatttgaatt 1740
gataaacatg gtgggttggc tgagggttaag agtatatgag gaacotttta aacgacaaca 1800
atactgctag ctttcaggat gattttttaa aaatagattc aaatgtgtta tcctctctct 1860
gaaacgcttc ctataactcg agtttatagg ggaagaaaaa gctattgttt acaattatat 1920
caccattaag gcaactgcta caccctgctt tgtattctgg gctaagattc attaaaaact 1980
agctgtctct
1989

```

<210> 111

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human  
anti-ALDH2 ASO

<400> 111

tcttccttgt ccccttcagc t

21